

Providing and using work equipment safely

A brief guide



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Introduction

This leaflet provides an outline of the requirements of the Provision and Use of Work Equipment Regulations 1998 (PUWER) and describes what you, as an employer, may need to do to protect your employees in the workplace. It will also be useful to employees and their representatives.

There may be particular requirements on the equipment you use at work; where this is the case the leaflet will point you towards further information you may need.

What equipment is covered by the Regulations?

Generally, **any equipment** which is **used by an employee at work** is covered, for example hammers, knives, ladders, drilling machines, power presses, circular saws, photocopiers, lifting equipment (including lifts), dumper trucks and motor vehicles. Similarly, if you allow employees to provide their own equipment then it will also be covered by PUWER and you will need to make sure it complies.

Examples of uses of equipment which are covered by the Regulations include starting or stopping the equipment, repairing, modifying, maintaining, servicing, cleaning and transporting.

Do the Regulations apply to me?

If you are an employer or self-employed person and you provide equipment for use at work, or if you have control of the use of equipment, then the Regulations will apply to you.

They **do not** apply to equipment used by the public, for example compressed-air equipment used in a garage forecourt. However, such circumstances are covered by the Health and Safety at Work etc Act 1974 (HSW Act).

The Regulations cover workplaces where the HSW Act applies – this includes factories, offshore installations, offices, shops, hospitals, hotels, places of entertainment etc. PUWER also applies in common parts of shared buildings and temporary places of work such as construction sites.

While the Regulations cover equipment used by people working from home, they do not apply to domestic work in a private household.

What do the Regulations require me to do?

You must **ensure** that the work equipment you provide meets the requirements of PUWER. You should ensure that it is:

- **suitable** for use, and for the purpose and conditions in which it is to be used;
- **maintained** in a safe condition for use so that people's health and safety is not at risk; and
- **inspected**, in certain circumstances, to ensure that it is and continues to be safe for use. Any inspection should be carried out by a competent person (this could be an employee if they have the necessary skills, knowledge and experience to perform the task) and a record kept until the next inspection.

You should also ensure that risks created by using the equipment are eliminated where possible or controlled as far as reasonably practicable by:

- taking appropriate **'hardware' measures**, eg providing suitable guards, protection devices, markings and warning devices, system control devices (such as emergency stop buttons) and personal protective equipment; and
- taking appropriate **'software' measures** such as following safe systems of work (eg ensuring maintenance is only performed when equipment is shut down etc), and providing adequate information, instruction and training about the specific equipment.

A combination of these measures may be necessary depending on the requirements of the work, your assessment of the risks involved, and the practicability of such measures.

Machinery

Why is machinery safety important?

Working with machinery can be dangerous because moving machinery can cause injuries in many ways:

- People can be hit and injured by moving parts of machinery or ejected material. Parts of the body can also be drawn into or trapped between rollers, belts and pulley drives.
- Sharp edges can cause cuts and severing injuries, sharp-pointed parts can stab or puncture the skin, and rough surface parts can cause friction or abrasion.
- People can be crushed both between parts moving together or towards a fixed part of the machine, wall or other object, and two parts moving past one another can cause shearing.
- Parts of the machine, materials and emissions (such as steam or water) can be hot or cold enough to cause burns or scalds and electricity can cause electrical shock and burns.
- Injuries can also occur due to machinery becoming unreliable and developing faults due to poor or no maintenance or when machines are used improperly through inexperience or lack of training.

Before you start

Before allowing someone to start using any machine you need to think about what risks there are and how these can be managed. You should:

- Check that it is complete, with all safeguards fitted, and free from defects. The term 'safeguard' includes guards, interlocks, two-hand controls, light guards,

pressure-sensitive mats etc. By law, the supplier must provide the right safeguards and inform buyers of any risks ('residual risks') that users need to be aware of and manage because they could not be designed out.

- Produce a safe system of work for using and maintaining the machine. Maintenance may require the inspection of critical features where deterioration would cause a risk. Also look at the residual risks identified by the manufacturer in the information/instructions provided with the machine and make sure they are included in the safe system of work.
- Ensure every static machine has been installed properly and is stable (usually fixed down) and is not in a location where other workers, customers or visitors may be exposed to risk.
- Choose the right machine for the job.

Note that new machines should be CE marked and be supplied with a Declaration of Conformity and instructions in English.

Make sure the machine is:

- safe for any work that has to be done when setting up, during normal use, when clearing blockages, when carrying out repairs for breakdowns, and during planned maintenance;
- properly switched off, isolated or locked-off before taking any action to remove blockages, clean or adjust the machine.

Also, make sure you identify and deal with the risks from:

- electrical, hydraulic or pneumatic power supplies;
- badly designed safeguards. These may be inconvenient to use or easily overridden, which could encourage your workers to risk injury and break the law. If they are, find out why they are doing it and take appropriate action to deal with the reasons/causes.

Preventing access to dangerous parts

Think about how you can make a machine safe. The measures you use to prevent access to dangerous parts should be in the following order. In some cases it may be necessary to use a combination of these measures:

- Use fixed guards (eg secured with screws or nuts and bolts) to enclose the dangerous parts, whenever practicable. Use the best material for these guards – plastic may be easy to see through but may easily be damaged. Where you use wire mesh or similar materials, make sure the holes are not large enough to allow access to moving parts.
- If fixed guards are not practicable, use other methods, eg interlock the guard so that the machine cannot start before the guard is closed and cannot be opened while the machine is still moving. In some cases, trip systems such as photoelectric devices, pressure-sensitive mats or automatic guards may be used if other guards are not practicable.
- Where guards cannot give full protection, use jigs, holders, push sticks etc if it is practicable to do so.
- Control any remaining risk by providing the operator with the necessary information, instruction, training, supervision and appropriate safety equipment.

Other things you should consider

- Adequate training should ensure that those who use the machine are competent to use it safely. This includes ensuring they have the correct skills,

knowledge, experience and risk awareness, and are physically suited to the task. Sometimes formal qualifications are needed, eg for chainsaw operators.

- Ensure control switches are clearly marked to show what they do.
- Have emergency stop controls where necessary, eg mushroom-head push buttons within easy reach.
- Make sure operating controls are designed and placed to avoid accidental operation and injury, use two-hand controls where necessary and shroud start buttons and pedals.
- Do not let unauthorised, unqualified or untrained people use machinery – never allow children to operate or help at machines. Some workers, eg new starters, young people or those with disabilities, may be particularly at risk and need instruction, training and supervision.
- If machines are controlled by programmable electronic systems, changes to any programmes should be carried out by a competent person (someone who has the necessary skills, knowledge and experience to carry out the work safely). Keep a record of such changes and check they have been made properly.
- Ensure the work area around the machine is kept clean and tidy, free from obstructions or slips and trips hazards, and well lit.

Mobile work equipment

In addition to these general requirements which apply to all work equipment, Part III of PUWER contains specific duties regarding mobile work equipment, for example fork-lift trucks and dumper trucks.

You should **ensure** that where mobile work equipment is used for carrying people, it is suitable for this purpose. Measures should be taken to reduce the risks (eg from it rolling over) to the safety of the people being carried, the operator and anyone else.

Power presses

Part IV of the Regulations also contains specific requirements regarding power presses. In particular, you should have a power press, and associated guard or protection device, thoroughly examined at specified intervals and inspected daily when it is in use to **ensure** that it is safe. This work should only be performed by a competent person and records should be kept.

Dos and don'ts of machinery safety

As the dutyholder you should ensure that all employees likely to use machinery understand and follow these dos and don'ts:

Do...

- ✓ check the machine is well maintained and fit to be used, ie appropriate for the job, working properly and all the safety measures are in place – guards, isolators, locking mechanisms, emergency off switches etc;
- ✓ use the machine properly and in accordance with the manufacturer's instructions;
- ✓ make sure employees are wearing the appropriate protective clothing and equipment, required for that machine, such as safety glasses, hearing protection and safety shoes;
- ✓ ensure that those who use machinery are competent to use it safely, provide training where necessary. For some machinery a formal qualification is needed.

Don't...

- ✗ use a machine or appliance that has a danger sign or tag attached to it. Danger signs should only be removed by an authorised person who is satisfied that the machine or process is now safe;

- ✘ remove any safeguards, even if their presence seems to make the job more difficult;
- ✘ wear dangling chains, loose clothing, rings or have loose long hair that could get caught up in moving parts;
- ✘ distract people who are using machines.

Plant and equipment maintenance

Why is maintenance of plant and equipment important?

Additional hazards can occur when plant and equipment becomes unreliable and develops faults. Maintenance allows these faults to be diagnosed early, to manage any risks. However, maintenance needs to be correctly planned and carried out. Unsafe maintenance has caused many fatalities and serious injuries either during the maintenance or to those using badly maintained or wrongly maintained/repaired equipment.

An effective maintenance programme will make plant and equipment more reliable. Fewer breakdowns will mean less dangerous contact with machinery is required, as well as having the cost benefits of better productivity and efficiency.

The Provision and Use of Work Equipment Regulations 1998 require work equipment and plant to be maintained so that it remains safe **and** that the maintenance operation is carried out safely.

What do I have to do?

If you are an employer and you provide equipment for use (such as hammers, knives and ladders or electrical power tools and larger plant), you need to demonstrate that you have arrangements in place to make sure it is maintained in a safe condition.

Think about what hazards can occur:

- if tools break during use;
- if machinery starts up unexpectedly;
- if there is contact with materials that are normally enclosed within the machine, ie caused by leaks/breakage/ejection etc.

Failing to correctly plan and communicate clear instructions and information before starting maintenance can lead to confusion and can cause accidents. This can be a particular problem if maintenance is carried out during normal production work or where there are contractors who are unfamiliar with the site.

Extra care is also required if maintenance involves:

- working at height or doing work that requires access to unusual parts of the building;
- entering vessels or confined spaces where there may be toxic materials or a lack of breathable air.

How can I do it?

Establishing a planned maintenance programme may be a useful step towards reducing risk, as well as having a reporting procedure for workers who may notice problems while working on machinery.

Some items of plant and equipment may have safety-critical features where deterioration would cause a risk. You must have arrangements in place to make sure the necessary inspections take place.

But there are other steps to consider:

Before you start maintenance

- Decide if the work should be done by specialist contractors. Never take on work for which you are not competent or not prepared.
- Plan the work carefully before you start, ideally using the manufacturer's maintenance instructions, and produce a safe system of work. This will reduce the risks and avoid unforeseen delays.
- Make sure maintenance staff are competent and have appropriate clothing and equipment.
- Try and use downtime for maintenance. You can avoid the difficulties in co-ordinating maintenance and lost production if maintenance work is performed before start-up or during shutdown periods.

Safe working areas

- You must provide safe access and a safe place of work.
- Don't just focus on the safety of maintenance workers – take the necessary precautions to ensure the safety of others who may be affected by their work, eg other employees or contractors working nearby.
- Set up signs and barriers and position people at key points if they are needed to keep other people out.

Safe plant and equipment

- Plant and equipment must be made safe before maintenance starts.

Safe isolation

- Ensure moving plant has stopped and that it is isolated from electrical and other power supplies. Most maintenance should be carried out with the power off. If the work is near uninsulated, overhead electrical conductors, eg close to overhead travelling cranes, cut the power off to these first.
- Lock off machines if there is a chance the power could be accidentally switched back on.
- Isolate plant and pipelines containing pressured fluid, gas, steam or hazardous material. Lock off isolating valves.

Other factors you need to consider

- Release any stored energy, such as compressed air or hydraulic pressure that could cause the machine to move or cycle.
- Support parts of plant that could fall, eg support the blades of down-stroking bale cutters and guillotines with blocks.
- Allow components that operate at high temperatures time to cool.
- Place mobile plant in neutral gear, apply the brake and chock the wheels.
- Safely clean out vessels containing flammable solids, liquids, gases or dusts, and check them before hot work is carried out, to prevent explosions. You may need specialist help and advice to do this safely.
- Avoid entering tanks, vessels or confined spaces where possible. These spaces can have additional hazards due to the atmosphere or risks of fire etc. If required, get specialist help to ensure adequate precautions are taken.
- Clean and check vessels containing toxic materials before work starts. If required, get specialist help to ensure adequate precautions are taken.
- Ensure that those who are doing the maintenance are competent to carry out the work. You may need to provide training to ensure that competence.

Do...

- ✓ ensure maintenance is carried out by a competent person (someone who has the necessary skills, knowledge and experience to carry out the work safely);
- ✓ maintain plant and equipment regularly – use the manufacturer’s maintenance instructions as a guide, particularly if there are safety-critical features;
- ✓ have a procedure that allows workers to report damaged or faulty equipment;
- ✓ provide the proper tools for the maintenance person;
- ✓ schedule maintenance to minimise the risk to other workers and the maintenance person wherever possible;
- ✓ make sure maintenance is done safely, that machines and moving parts are isolated or locked and that flammable/explosive/toxic materials are dealt with properly.

Don't...

- ✗ ignore maintenance;
- ✗ ignore reports of damaged or unsafe equipment;
- ✗ use faulty or damaged equipment.

How do the Regulations relate to other health and safety legislation?

The requirements of the Regulations need to be considered alongside other health and safety law, eg section 2 of the HSW Act requires all employers to ensure, so far as is reasonably practicable, the health, safety and welfare of all their employees and the Management of Health and Safety at Work Regulations 1999 contain duties for carrying out of a risk assessment and identify measures to eliminate, or reduce, the risks presented by the particular hazards in your workplace. Guidance on how to do this can be found on HSE’s risk management web pages www.hse.gov.uk/risk/.

Other more specific legislation may also apply, for example:

- the Workplace (Health, Safety and Welfare) Regulations 1992, which cover, for example, workplace risks to pedestrians from vehicles;
- the Construction (Design and Management) Regulations 2007 which contain, for example, specific requirements relating to certain types of work equipment such as scaffolding;
- the Supply of Machinery (Safety) Regulations 2008, as amended, which require that machinery:
 - is safe when supplied ('safe' refers to risks to both safety and health);
 - comes with a Declaration of Conformity and user instructions in English; and
 - is CE marked.

These requirements also apply to interchangeable equipment, safety components placed independently on the market, lifting accessories, chains, ropes and webbing, removable transmission devices and partly completed machinery.

Generally, if you are meeting the requirements of more specific legislation such as those outlined above, it should normally be sufficient to meet the more general requirements of PUWER.

Find out more

Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 (Third edition)
HSE Books 2008 ISBN 978 0 7176 6295 1 www.hse.gov.uk/pubns/books/l22.htm

Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and guidance L113 HSE Books 1998
ISBN 978 0 7176 1628 2 www.hse.gov.uk/pubns/books/l113.htm

Hiring and leasing out of plant: Application of PUWER 98, regulations 26 and 27
MISC156 HSE Books 1998 www.hse.gov.uk/pubns/9204.pdf

Safe use of power presses. Provision and Use of Work Equipment Regulations 1998 as applied to power presses. Approved Code of Practice and guidance L112
HSE Books 1998 ISBN 978 0 7176 1627 5 www.hse.gov.uk/pubns/books/l112.htm

Workplace health, safety and welfare: A short guide for managers Leaflet
INDG244(rev2) HSE Books 2007 www.hse.gov.uk/pubns/indg244.htm

Managing health and safety in construction. Construction (Design and Management) Regulations 2007. Approved Code of Practice L144
HSE Books 2007 ISBN 978 0 7176 6223 4 www.hse.gov.uk/pubns/books/l144.htm

Buying new machinery: A short guide to the law and your responsibilities when buying new machinery for use at work Leaflet INDG271(rev1) HSE Books 2011
www.hse.gov.uk/pubns/indg271.htm

Safe use of woodworking machinery. Provision and Use of Work Equipment Regulations 1998 as applied to woodworking machinery. Approved Code of Practice and guidance L114 HSE Books 1998 ISBN 978 0 7176 1630 5
www.hse.gov.uk/pubns/books/l114.htm

Lifting equipment at work: A brief guide to the law Leaflet INDG290(rev1)
HSE Books 2013 www.hse.gov.uk/pubns/indg290.htm

Thorough examination of lifting equipment: A simple guide for employers Leaflet
INDG422 HSE Books 2008 www.hse.gov.uk/pubns/indg422.htm

Workplace transport safety: A brief guide Leaflet INDG199(rev2) HSE Books 2013
www.hse.gov.uk/pubns/indg199.htm

Workplace transport safety: An employers' guide HSG136 (Second edition)
HSE Books 2005 ISBN 978 0 7176 6154 1
www.hse.gov.uk/pubns/books/hsg136.htm

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at www.hse.gov.uk/pubns/indg291.htm.

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